

SYSTEM AND METHOD FOR VARIABLE SPEED OPERATION OF A SCREW COMPRESSOR

ABSTRACT OF THE DISCLOSURE

A system and method are provided for variable speed operation of a screw compressor to obtain increased capacity and efficiency. The screw compressor is connected to an induction motor driven by a variable speed drive, wherein the screw compressor has a variable output capacity that is dependent on the output speed of the motor. To obtain increased capacity and efficiency, the screw compressor is operated at a speed greater than the screw compressor's rated speed and does not include a slide valve. The maximum operating speed of the screw compressor, which speed is greater than the rated speed, is related to the maximum operating speed of the motor when operated at a voltage and frequency provided by the variable speed drive that is greater than the motor's rated voltage and frequency in a constant flux or constant volts/Hz mode.